Anirudh Singhal | **16D070032**
Electrical Engineering | **Dual Degree (B.Tech. + M.Tech.)**
Indian Institute of Technology, Bombay | **Gender: Male**
Specialization: Communication & Signal Processing | **DOB: 18-05-1998**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	9.56

Pursuing a **Minor Degree** in **Computer Science and Engineering** with CPI of **9.67**

SCHOLASTIC ACHIEVEMENTS

- Ranked **4th** amongst 70+ students in Electrical Engineering Department's Dual Degree programme *'20*
- Selected to represent IIT Bombay (4 out of 900+) as an **exchange scholar** to attend a semester at **Technical University of Denmark** (DTU), during which attained a Semester Performance Index (SPI) of **10/10** *'19*
- Awarded **AP Grade** for stellar performance in Network Theory and **Markov Chains & Queuing Systems** *'18,'19*
- Secured an **All India Rank** of **368** out of 150k candidates appearing in the **JEE Advanced** examination *'16*
- Recipient of the prestigious **KVPY** (among **top 2%** out of **50k+** candidates) Fellowship by Govt. of India *'15*

INTERNSHIPS & KEY PROJECTS

Deep Learning Based Solutions for Fashion Compatibility | **Adobe Systems** *May'19-Jul'19*
Research Intern, Media and Data Science Research Lab, Adobe Systems, Noida

- Outperformed the current state-of-the-art model by **7%** in measuring the compatibility of a set of clothing items
- Introduced a category conditioned **Graph Convolution Network** to model the category and context of the items
- Developed an Attention based **Autoencoder** for clustering the outfits in **6 clusters** based on their fashion styles
- Collaborated with a team of 5 to **publish** a paper in a top tier conference and file a **patent** in US Patent Office

Adaptive Mode Estimator for Continuous Distributions | **Master's Thesis** *Jan'20-Present*
Guide: Prof. Nikhil Karamchandani, Electrical Engineering

- Reduced no. of operations by **99%** in estimating mode of high-dimensional data by adaptive sampling of dimensions
- Proposed an **Information Theoretically** optimal algorithm that estimates the $\mathbf{k^{th}}$ **nearest neighbour** of a point
- Showcased **optimality** of the algorithm by finding its upper and lower bounds, and proving they are of **same order**
- Utilised the proposed method to develop a **multi-armed bandit** algo to estimate mode of continuous distributions

Risk Analysis and Portfolio Optimization | **DTU Management, Denmark** *Aug'19-Nov'19*
Guide: Prof. Nina Lange, Department of Management, Technical University of Denmark

- Designed the global minimum variance and **tangent portfolio** consisting of 8 stocks with and without short-selling
- Attained a return of **60.88%** with a risk of **0.42** and a Sharpe ratio of **1.42** for the tangent portfolio with shorting
- Employed **Fama-French** and **Capital Asset Pricing** models to interpret dependence of return on risk for portfolios
- Computed a portfolio of Danish Bonds with a pre-specified duration using a **Nelson-Siegel** term structure model

Software Development Intern | **OkCredit, Bangalore** *May'18-Jul'18*
*Developed an in-house app analytics service for OkCredit, a **startup** which provides a mobile based digital ledger*

- Designed an infrastructure to collect the user interactions of **10k+ users** from a mobile app for product analytics
  - Built a stateless server in **Google Go** to store data in a Cassandra database and transfer it daily to **Amazon S3**
  - Created an **Android Library** to store user interaction data locally on the mobile phone and send it to the server
- Incorporated Google Sign-In as a ID provider in an **Oauth 2.0** protocol based authentication service in Google Go
- Devised and performed **unit** & **load** tests of REST APIs to calculate their maximum load as a function of resources

Coronary Heart Disease Detection | **DTU Compute, Denmark** *Sep'19-Dec'19*
Machine Learning and Data Mining, Prof. Tue Herlau, Technical University of Denmark *Course Project*

- Achieved an accuracy of **75%** in identifying Coronary Heart Disease in patients using regularized logistic regression
- Employed **association rule mining** to find **13** associations in patient's attributes with confidence of at least **80%**

POSITIONS OF RESPONSIBILITY

Electrical Subsystem Leader, Advitiy | **IITB Student Satellite Program** *Feb'18-Mar'19*
Advitiy is the second student satellite of IITB, fully developed and researched by students of IITB

- Spearheaded a **10** membered inter-disciplinary team consisting of two subdivisions : Power and On-Board Computer
- Collaborated with a team of **50+** to ensure implementation of **Quality Assurance** practices for **100%** reliability
- Recruited **9 candidates** (out of 100+) by conducting a 3 stage procedure to test technical and interpersonal skills
- Contributed to **Satellite 101 Wiki**, a compilation of the knowledge of the satellite project gaining **100k+** views

Teaching Assistant | **IIT Bombay** *Jan'19-Apr'19, Aug'20-Present*
Selected as Teaching Assistant for MA 207: Differential Equations 2 and EE 325: Probability & Random Processes

- Upskilled the performance of **150+** students by collaborating with the instructor and conducting weekly tutorials

TECHNICAL SKILLS & EXTRA CURRICULARS

- **Programming :** Python , C++ , Google Go , MATLAB , TensorFlow , PyTorch , Numpy , SkLearn , Pandas
- **Social Work :** Taught English to college kitchen staff as a part of **Adult Literacy Program (ALP)**, NSS
- **Travelling :** Backpacked across **15 European countries** and **25+ cities** in 4 months on a shoestring budget
- **Adventures :** Skiing in Zakopane, Poland; Trekking on Mt.Ulriken in Bergen, Norway; Mountaineering in J&K

Scholastic achievements and extracurricular activities are not verified by the Placement Cell